



registered agents and via its corporate officers. Citigroup is a publicly traded company on the New York Stock Exchange under the symbol “C.”

3. On information and belief, Defendant Citibank, National Association (“Citibank NA”) is a national banking association regulated by the Securities and Exchange Commission and formed under the laws of Delaware. Citibank NA’s principal executive office is located in 399 Park Avenue, New York, NY. Its principal place of business is 388 Greenwich Street, 14<sup>th</sup> floor, New York, N.Y. 10013. Citibank NA also has offices located at 5800 S Corporate Place, Sioux Falls, SD 57108. Citibank NA is an indirect, wholly-owned subsidiary of Defendant Citigroup. Citibank NA may be served with process via its registered agents and/or its corporate officers.

4. On information and belief, Defendant Citigroup “is a global diversified financial services holding company whose businesses provide consumers, corporations, governments and institutions with a broad, yet focused, range of financial products and services, including consumer banking and credit, corporate and investment banking, securities brokerage, trade and securities services and wealth management.” *See 2020 Annual Report*, CITI, [https://www.citigroup.com/citi/investor/quarterly/2021/ar20\\_en.pdf?ieNocache=293](https://www.citigroup.com/citi/investor/quarterly/2021/ar20_en.pdf?ieNocache=293), at 26 (“Overview”) (last downloaded June 11, 2021). Citigroup operates across the world having “200 million customer accounts and does business in more than 160 countries and jurisdictions.” *Id.* Citigroup operates in four regions: 1) North America; 2) Europe, Middle East, and Africa; 3) Latin America; and 4) Asia. *Id.* at 26-7. The North American region consists of the U.S., Canada, and Puerto Rico. *Id.* Citigroup operates via two primary business segments consisting of a Global Consumer Banking (referred to also as “GCB”) segment and an Institutional Clients Group segment. *Id.* The term “Citi” is used herein to refer to Defendant Citigroup, Inc. and all of its consolidated subsidiaries. *Id.*

5. On information and belief, Citibank NA “is a commercial bank and wholly owned subsidiary of Citigroup.” *See id.* at 168. Citibank NA is one of Citigroup’s “consolidated subsidiaries in which it holds, directly or indirectly, more than 50% of the voting rights or where it exercises control.” *Id.* Citibank NA offers “consumer finance, mortgage lending and retail banking (including commercial banking) products and services; investment banking, cash management and trade finance; and private banking products and services.” *Id.* These Citi products and services include Citibank NA offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing payment cards (e.g., credit card and debit cards) account services and transactions for Citi’s customers, consumers, and clients. *See, e.g., Card Agreement, CITI*, <https://www.citi.com/credit-cards/compare-credit-cards/citi.action?ID=CMA-PIT> (indicating that “This Card Agreement...is your contract with us” and indicating that “us” means “Citibank, N.A.”) (last visited June 11, 2021).

6. On information and belief, the Citi Defendants, individually and via their subsidiaries and affiliates, contract with and issue credit and debit cards to their customers (“cardholders”) to provide card services. *See id.* The Asserted Patents cover Citi’s products, services, and methods related to offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated accounts, which are designed, developed, manufactured, distributed, sold, offered for sale, and used by the Citi Defendants and/or their customers, consumers, and clients. For example, within Citi’s Global Consumer Banking segment, Defendants infringe the Asserted Patents via at least Citi’s “Citi-branded cards,” and “retail banking,” which are services that allow Citi’s clients and consumers to conduct financial and banking transactions via credit and debit cards, and their associated accounts. *See 2020 Annual Report*, at 27. Moreover, Defendants’ infringing credit and

debit card account systems and processes are compatible with application (“app”)-based mobile payment methods via third-party services, such as Google Pay and Samsung Pay that are installed on a consumer’s device, such as a mobile phone, tablet, or smartwatch. *See, e.g., Citi / G Pay, Show with east online and on the go*, CITI, <https://www.citi.com/credit-cards/creditcards/citi.action?ID=citi-google-pay> (last visited June 11, 2021).

7. On information and belief, Defendants, on their own and/or via subsidiaries and affiliates, maintain a corporate and commercial presence in the United States, including in Texas and this District, via at least its 1) physical bank locations, operation centers, and ATM locations established throughout Texas, including this District; 2) Citi’s online presence (e.g., citi.com and citigroup.com) that provides to consumers access to Citi’s products and services, including those identified as infringing herein; and 3) consumers and clients of Citi who utilize Citi credit and debit card account services, at the point of sale, including via contactless payment methods, in numerous merchant physical and online sites, i.e., retail stores, restaurants, and other service providers accepting Citi credit and debit cards. *See, e.g., 2020 Annual Report*, at 184 (“GCB includes a global, full-service consumer franchise delivering a wide array of banking, credit card, lending and investment services through a network of local branches, offices and electronic delivery systems.”). Such credit and debit card account services include systems and methods for processing digital transactions, via online transactions and mobile payment solutions. *See, e.g., Consumer Business*, CITI, [https://www.citigroup.com/citi/about/consumer\\_businesses.html](https://www.citigroup.com/citi/about/consumer_businesses.html) (“With physical cards rapidly digitizing, we continued to expand digital lending capabilities and point-of-sale solutions to give customers ease, convenience and choice in payments.”). Defendants, on their own and/or via alter egos, agents, subsidiaries, partners, and affiliates, maintain an operations center in this District located at 100 Citibank Dr, San Antonio, TX 78245, among other properties identified herein. Thus,

the Citi Defendants do business, including committing infringing acts, in the U.S., the state of Texas, and in this District.

### **JURISDICTION AND VENUE**

8. This action arises under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others.

9. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

#### **A. Defendant Citigroup**

10. On information and belief, Defendant Citigroup is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and this District, including: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of the privilege of conducting those activities in this state and this District and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this District, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this District vicariously through and/or in concert with its alter egos, intermediaries, agents, distributors, partners, subsidiaries, clients, customers, affiliates, and/or consumers.

11. For example, Citigroup owns and/or controls multiple subsidiaries and affiliates, including, but not limited to Defendant Citibank NA that has a significant business presence in the U.S. and in Texas. *See, e.g., Search & Apply for Jobs, CITIGROUP.COM*, <https://jobs.citi.com/search-jobs?k=&l=&orgIds=287-34934> (Filter by "State" and "City" to see Citi employment locations across Texas, including Austin and San Antonio, soliciting 92 job openings) (last visited June 14,

2021). Citigroup, via its own activities and via at least wholly owned subsidiary Citibank NA, has an operations center in San Antonio, TX, among other properties, in this District, at 100 Citibank Dr, San Antonio, TX 78245. *See Shape your Career with Citi in San Antonio, Texas*, CITIGROUP.COM, <https://jobs.citi.com/sanantonio> (“We are extremely proud to be the home away from home for 2,400 talented, dedicated, and inspiring people at various stages of life.”) (last visited June 14, 2021). Bexar county CAD search results show that Defendant Citibank NA’s subsidiary Citicorp Credit Services Inc. (USA) (“Citicorp Credit”) is the listed owner of Citigroup’s San Antonio operations center, which is a campus comprising at least four separate structures. *See Property Search Results > 1 - 24 of 24 for Year 2021*, BEXAR CAD, <http://bexar.trueautomation.com/clientdb/SearchResults.aspx?cid=110> (under advanced property search type “citi”) (last visited June 14, 2021). Citicorp Credit is registered to do business in Texas and is 100% owned by Citibank NA. Citigroup’s operations center employs over two thousand (2,000) residents of the state of Texas and this District. *See CITI HOSTS SEPTEMBER BOARD OF DIRECTORS MEETING*, SAN ANTONIO CHAMBER OF COMMERCE, Sept. 27, 2019, <https://www.sachamber.org/news/2019/09/27/board-action-report-september-2019/> (“Citi employs 2,500 employees locally and has an established reputation for being military friendly, embracing an inclusive office culture, and championing healthy work-life balance. Citi demonstrates its commitment to the community through corporate giving campaigns and employee volunteer partnerships with more than 20 organizations, and last year Citi employees dedicated more than 10,000 hours to volunteer efforts.”) (last visited June 14, 2021).

12. Other subsidiaries of Defendants, including Citifinancial Inc. and Citimortgage Inc., are listed owners of residential properties in Bexar county. Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. are each registered to do business in Texas.

13. Such a corporate and commercial presence in Texas, including in this District, by Defendant Citigroup furthers the development, design, manufacture, distribution, sale, and use of Citigroup's infringing products, services, and methods for offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated accounts. Through direction and control of its alter egos, intermediaries, agents, subsidiaries, and affiliates, Citigroup has committed acts of direct and/or indirect patent infringement within Texas, this District, and elsewhere in the United States, giving rise to this action and/or has established minimum contacts with Texas such that personal jurisdiction over Citigroup would not offend traditional notions of fair play and substantial justice.

14. On information and belief, Citigroup controls or otherwise directs and authorizes all activities of its alter egos, intermediaries, agents, subsidiaries, and affiliates, including, but not limited to Defendant Citibank NA and other subsidiaries Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. Via its own activities and via at least these entities, Citigroup has substantial business operations in Texas, which include retail and non-profit partners, clients, customers and related financial products and services, such as retail banking services, investment services, Citi-branded cards, and private label and co-brand cards. Citigroup has placed and continues to place infringing products, services, and methods for offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated accounts, including related mobile, contactless, and online payment systems, into the U.S. stream of commerce. Citigroup has placed such products, services, and methods into the stream of commerce with the knowledge and understanding that such products are, will be, and continue to be sold, offered for sale, and/or used in this District and the State of Texas. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523

F.3d 1353, 1369-70 (Fed. Cir. 2008) (“[T]he sale [for purposes of § 271] occurred at the location of the buyer.”).

15. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(c) and 1400(b). As alleged herein, Defendant Citigroup has committed acts of infringement in this District. As further alleged herein, Defendant Citigroup, via its own operations and employees located there and via ratification of Defendant Citibank NA’s presence and the presence of other subsidiaries as agents and/or alter egos of Citigroup, has a regular and established place of business, in this District at least at an operations center located at 100 Citibank Dr, San Antonio, TX 78245. Accordingly, Citigroup may be sued in this district under 28 U.S.C. § 1400(b).

**B. Defendant Citibank NA**

16. On information and belief, Defendant Citibank NA is subject to this Court’s specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and this District, including: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of the privilege of conducting those activities in this state and this District and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this District, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this District vicariously through and/or in concert with its alter egos, intermediaries, agents, distributors, importers, customers, subsidiaries, and/or consumers. For example, Citibank NA, including as an agent and alter ego of parent company Citigroup, owns a Citi operations center in San Antonio, TX, via its subsidiary Citicorp Credit Services Inc. (USA), that employs over 2,000 Citi employees, operates a large network of Citibank ATMs, and maintains in a retail services and



retail banking business that provides to products, services, and methods that include Citibank NA offering, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card account services, via credit and debit cards and associated accounts, including related mobile, contactless, and online payment systems, for Citi's customers, consumers, and clients in Texas and this District. Moreover, Citibank NA identifies itself as the Citi entity that issues Citi credit and debit cards to Citi's clients, consumers, and customers. *See, e.g., Card Agreement, CITI, available at* [https://www.citi.com/CRD/PDF/CMA/cardAgreement/CMA\\_PID410.pdf](https://www.citi.com/CRD/PDF/CMA/cardAgreement/CMA_PID410.pdf) ("This Card Agreement (Agreement) is your contract with us," and, under Definitions, "we, us and our – Citibank, N.A.") (last visited June 17, 2021).

17. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(c) and 1400(b). Defendant Citibank NA has committed acts of infringement in this District. As further alleged herein, Defendant Citibank NA, via its own operations and employees located there and via ratification of its subsidiary Citicorp Credit Services Inc. (USA)'s presence and the presence of other subsidiaries as agents and/or alter egos of Citibank NA, has a regular and established place of business, in this District at least at an operations center located at 100 Citibank Dr, San Antonio, TX 78245. Accordingly, Citibank NA may be sued in this district under 28 U.S.C. § 1400(b).

18. On information and belief, Defendants Citigroup and Citibank NA each have significant ties to, and presence in, the State of Texas and this District, making venue in this District both proper and convenient for this action.

### **THE ASSERTED PATENTS AND TECHNOLOGY**

19. The Asserted Patents cover various aspects of products, services, and methods that include the Citi Defendants' offering, issuing, providing, registering, facilitating, maintaining,

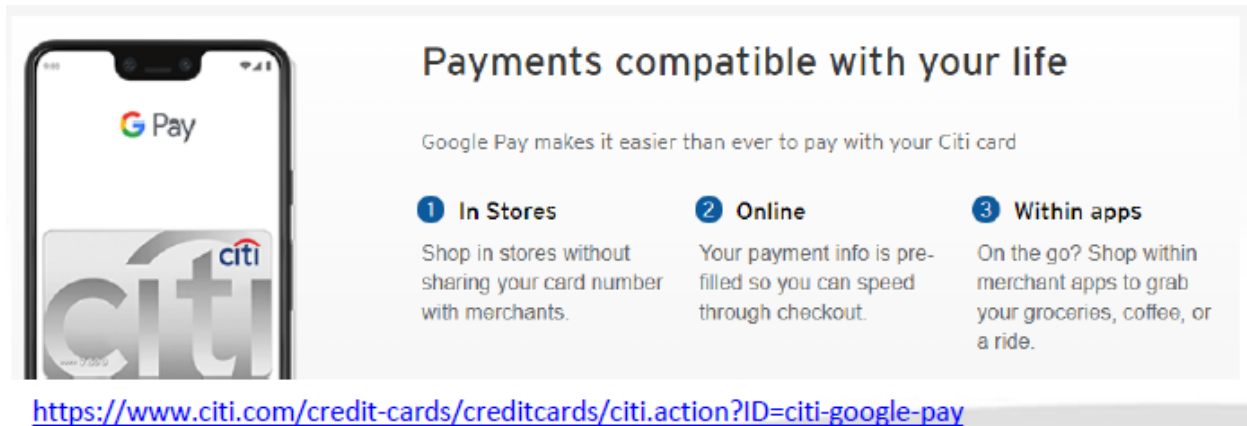
transacting, authenticating, and processing credit card and debit card accounts and related products and services for Citi's customers, consumers, and clients, , including Citi's internal payment processing, authentication, authorization, and fraud detection systems and methods, referred to herein collectively as the "Accused Instrumentalities." The apparatuses, systems, and methods described in each of the Asserted Patents apply, for example, to systems for securing, authorizing, and facilitating financial transactions, i.e., purchases, related to credit and debit card accounts.

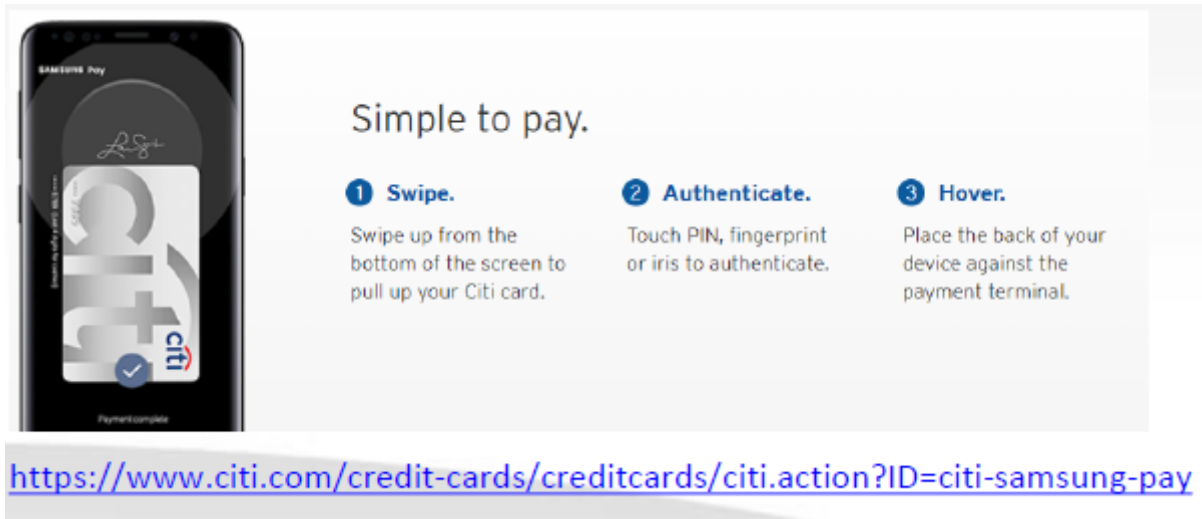
20. On information and belief, a significant portion of the operating revenue of the Citi Defendants is derived from offering and selling products, services, and methods related to issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts, and related financial benefits of, including fees and interest, for Citi's customers, consumers, and clients. Citi's North America revenues in 2020 were \$19.1 billion U.S. dollars; this included Citi-branded card revenues of \$8.8 billion U.S. dollars. *See 2020 Annual Report*, at 7.

21. The Asserted Patents cover Accused Instrumentalities of the Citi Defendants that secure, authorize, and facilitate mobile payments, contactless payments, and online payments using credit and debit card accounts activated, offered, issued, provided, established, registered, facilitated, and maintained by Citi, including by the Citi Defendants and their alter egos, intermediaries, agents, distributors, partners, subsidiaries, and clients. Clients, customers, and consumers of the Accused Instrumentalities use such products at the point of sale, for example, via mobile wallets provided on a mobile device with the appropriate smartcard and/or app installed (and in some cases the software is native to the device) or via an embedded chip or smartcard embedded within a physical credit or debit card. In other instances, the Accused Instrumentalities

may be utilized in online purchases conducted over a network (e.g., the Internet) and/or when the user of the payment card account is registering, activating, or maintaining the account.

22. On information and belief, Citi's credit and debit card account services utilize the Europay, Mastercard, and Visa (EMV) standards in processing, securing, and authenticating financial transactions. For example, the Citi Defendants provide payment applications (often provisioned to a Secure Element) that use EMV standards to process payments. In some cases, the Citi Defendants' payment applications reside on a user's mobile device (e.g., stored in a Secure Element or other secure memory), allowing the user to make payments via a Citi credit or debit card without presenting the physical card at the time of payment (referred to herein as a "mobile payment"). Citi's mobile payments can be facilitated by using mobile wallets such as Google Pay and Samsung Pay, such as shown below:





23. Mobile wallets may be implemented as an application (or “app”) on a mobile device, e.g., a mobile phone, tablet, or smartwatch. In some implementations, mobile wallets utilize Host Card Emulation, where, instead of storing the Citi’s payment application in a Secure Element on the host device, it is stored in the host CPU or remotely, e.g., in the cloud. In either case, mobile payments are made wirelessly, without contact needed between payment device and payment terminal, via, for example, Near Field Communication (“NFC”) protocols or Magnetic Secure Transmission (MST), as explained below. A user need only hold the mobile device close to the payment terminal in order to establish communication between the payment application and the payment terminal. These wireless methods utilized with EMV deliver secure transactions between a payment terminal and the mobile device.

## EMV

EMV stands for Europay, MasterCard, and Visa. It’s the technical standard for payments using Smart Cards which are cards with an embedded chip. These cards can be contact cards that need to be inserted in a terminal or contactless cards that can be read using NFC technology. Google Pay payments are presented to the payment terminal as EMV contactless payments.

<https://support.google.com/pay/merchants/answer/7151369?hl=en>

Field Communication (NFC) and Magnetic Secure Transmission (MST). MST is Samsung's innovative technology that delivers secure transactions for new EMV chip and NFC terminals, as well as traditional, magnetic strip terminals, enabling consumers to use

<https://news.samsung.com/us/samsung-pay-partners-global-pos-providers-accelerate-mobile-payments-adoption/>

24. On information and belief, as indicated below, Citi encourages its clients, consumers, and customers to shop with its Citi credit and debit cards using a digital wallet service which provides a distribution channel by which Citi's payment applications (e.g., via the Secure Elements on the mobile device) can be accessed and used:

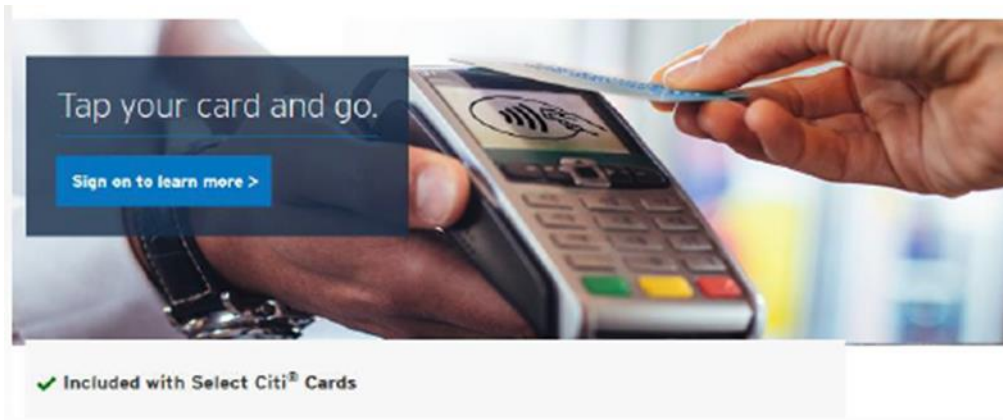
Here is how you can use digital wallets:

- **For online shopping:** Digital wallet services like Masterpass™ allow you to store details like your payment information and shipping address in a centralized account so that you don't have to enter all of your information every time you shop online – just look for your digital wallet as a payment option when checking out at your favorite merchants, sign in using your username and password, and then complete your purchase.
- **Within an app:** These are typically retailer-specific apps connected to your payment information– and can be used for everything from pre-ordering your morning coffee to paying for it and collecting loyalty points. Many also allow you to store rewards and coupons as digital barcodes, which can then be scanned when you're at the cash register to get a discount on your purchase.
- **In the store:** Here, you don't need to swipe a card, enter a PIN at the register, or sign a receipt; you simply tap your smartphone on a contactless-enabled terminal, usually located near the register at check-out. After you tap, an additional step (or steps, depending on your device) is usually required to complete the transaction, such as fingerprint authentication or entering a passcode into your mobile phone.


See *Digital Wallets Demystified*, CITI, <https://www.citi.com/credit-cards/credit-card-rewards/digital-wallets-and-virtual-wallets> (last visited June 15, 2021).

25. The Accused Instrumentalities also include at least Defendants' payment card (e.g., credit card and debit card) related products, services, and methods for card payments using a physical credit card having an embedded chip or smartcard. See, e.g., *View and Compare All Credit Cards*, CITI, <https://www.citi.com/credit-cards/compare/view-all-credit-cards> (last visited June 15, 2021). For example, the Citi Defendants' payment applications reside on microchips embedded on

Citi's credit and debit cards, which allow the user to tap the payment card to a reader and complete a transaction wirelessly and without contact between the card's magnetic stripe and the reader.



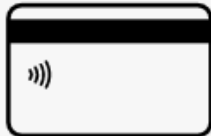
<https://www.cardbenefits.citi.com/Products/Contactless-Card?cmp=PAC~00~190214~BENBUILD~contactless>

26. On information and belief, the Accused Instrumentalities include at least Defendants' payment card (e.g., credit card and debit card) related products, services, and methods for contactless payments using a physical credit card having an embedded chip or smartcard that utilize EMV standards for contactless payment. *See, e.g., View and Compare All Credit Cards*, CITI, <https://www.citi.com/credit-cards/compare/view-all-credit-cards> (last visited June 15, 2021). These credit and debit cards include contactless payment functionality indicated by the signal  symbol, and further described below.

✓ **Included with Select Citibank® Debit Card or Citi® Credit Card**

Make everyday purchases quickly and safely with just a tap of your contactless-chip enabled card. Experience more convenient and secure checkout with contactless pay. Continue to enjoy all of your existing rewards, benefits, and account protection so that you may tap your card with peace of mind. If a store does not have a contactless payment reader, you can still swipe or insert your card into the payment reader.

**Here's how it works:**



**1. Find the symbol**

See contactless indicator on the front or back of your card



**2. Tap your card**

Look for contactless symbol at the payment reader during checkout and tap your card



**3. You're all set**

Your purchase is good to go in seconds

See *Citi Credit Card Benefits*, CITI, <https://www.cardbenefits.citi.com/Products/Contactless-Card> (last visited June 15, 2021).

27. On information and belief, a process referred to as “tokenization,” which is also part of the EMV standards, is also utilized by the Citi Defendants in authorizing credit and debit transactions, via online payments, in-app payments, and mobile payments. As explained below, a “payment token” is a “surrogate value for a PAN” (a primary account number). In tokenization, “Payment Tokens are requested, generated, issued, provisioned, and processed as a surrogate for PANs.” See also *Introducing Tokenization*, CITI, [https://www.citibank.com/tts/sa/commercial\\_cards/newsletter/2016\\_Q3/tokenization.html](https://www.citibank.com/tts/sa/commercial_cards/newsletter/2016_Q3/tokenization.html) (“Tokenization is the process of substituting a sensitive data element with a non-sensitive equivalent, referred to as a token, which has no extrinsic or exploitable meaning or value.”) (last visited June 18, 2021).



Payment Token	A surrogate value for a PAN that is a variable length, ISO/IEC 7812-compliant numeric issued from a designated Token BIN or Token BIN Range and flagged accordingly in all appropriate BIN tables. A Payment Token must pass basic validation rules of a PAN, including the Luhn check digit. Payment Tokens must not collide or conflict with a PAN.
Payment Tokenisation	A specific form of tokenisation whereby Payment Tokens are requested, generated, issued, provisioned, and processed as a surrogate for PANs as described by the processes defined in this technical framework.

<https://www.emvco.com/wp-content/plugins/pmpo-customizations/oy-getfile.php?u=/wp-content/uploads/documents/EMVCo-Payment-Tokenisation-Specification-Technical-Framework-v2.0.pdf>

28. Via mobile wallet applications, such as Google Pay, tokenization is implemented by the Citi Defendants assigning a “virtual account number” or token that “securely links the actual card number to a virtual card on the user’s Google Pay-enabled device.”

## Tokenization

Google Pay facilitates the assignment of a “virtual account number,” also called a token, that securely links the actual card number to a virtual card on the user’s Google Pay-enabled device. A token is unique to the card number it represents. The app user’s mobile device keeps an encryption key in memory that it uses to decrypt limited-use and single-use keys (also called cryptograms) for contactless transactions (NFC payments).

<https://support.google.com/pay/merchants/answer/7151299?hl=en>

29. On information and belief, the Citi Defendants also utilize virtual account numbers at least in transactions conducted “when shopping online or by mail order,” as indicated below.





30. The Citi Defendants, as a payment card account issuer, perform and/or direct and control the operation of mobile wallets and contactless payments utilizing microchips or smartcards embedded within the physical credit or debit card. As described below with respect to the mobile wallet Google Pay, for example, the Citi Defendants provision third-party mobile wallets with the Citi Defendants' own credentials and EMV payment applications.

**(c) GPC's Role.** While Google Pay enables you to store your Payment Instruments and transmit their information to merchants or transit providers, neither GPC nor Google processes Google Pay transactions with such Payment Instruments, and neither exercises control over: the availability or accuracy of payment cards, payments, refunds, chargebacks; the provisioning (or addition) of cards to Google Pay; or other commercial activity relating to your use of Google Pay. For any concerns relating to the foregoing, please contact your Payment Instrument's issuer. You acknowledge and agree that your transactions through Google Pay are transactions between you and the merchant and not with GPC, Google, or any of their affiliates. For disputes relating to payment transactions conducted using Google Pay, contact your Payment Instrument's issuer or the appropriate merchant. Neither GPC nor Google is a party to your registered Payment Instruments' cardholder agreements or other terms of use, and neither is involved in issuing credit or determining eligibility for credit. GPC does not make any representation or verify that any of your Payment Instruments are in good standing or that the issuer of your Payment Instrument will authorize or approve any transaction with a merchant or transit provider when you use Google Pay in connection with that transaction.

[https://payments.google.com/payments/apis-secure/u/0/get\\_legal\\_document?ldo=0&ldt=googlepaytos&ldl=und#SafeHtmlFilter\\_US](https://payments.google.com/payments/apis-secure/u/0/get_legal_document?ldo=0&ldt=googlepaytos&ldl=und#SafeHtmlFilter_US)

31. The Accused Instrumentalities include Citi's products, processes, and systems offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts and related products and services for Citi's customers, consumers, and clients, including Citi's internal payment processing, authentication, authorization, and fraud detection systems and methods, related to at least the following Citi payment cards: Citi Custom Cash<sup>SM</sup> Card; Citi<sup>®</sup> Diamond Preferred<sup>®</sup> Credit Card; Citi<sup>®</sup> Double Cash Credit Card; Citi Rewards+<sup>®</sup> Credit Card; Citi Premier<sup>®</sup> Credit Card; Citi Prestige<sup>®</sup> Credit Card; Citi<sup>®</sup> Secured Mastercard<sup>®</sup> Credit Card; Citi Simplicity<sup>®</sup> Credit Card; Citi<sup>®</sup> / AAdvantage<sup>®</sup> Platinum Select<sup>®</sup> World Elite Mastercard<sup>®</sup> Credit Card; American Airlines AAdvantage<sup>®</sup> MileUp<sup>SM</sup> Mastercard<sup>®</sup> Credit Card; Citi<sup>®</sup> / AAdvantage<sup>®</sup> Executive World Elite Mastercard<sup>®</sup> Credit Card; CitiBusiness<sup>®</sup> / AAdvantage<sup>®</sup> Platinum Select<sup>®</sup> Mastercard<sup>®</sup> Credit Card; Shop Your Way Mastercard; Sears Mastercard; Sears Mastercard with Thank You Rewards; Exxon Mobile Smart Card; Costco Anywhere Visa<sup>®</sup> Credit Card by Citi; Costco Anywhere Visa<sup>®</sup>

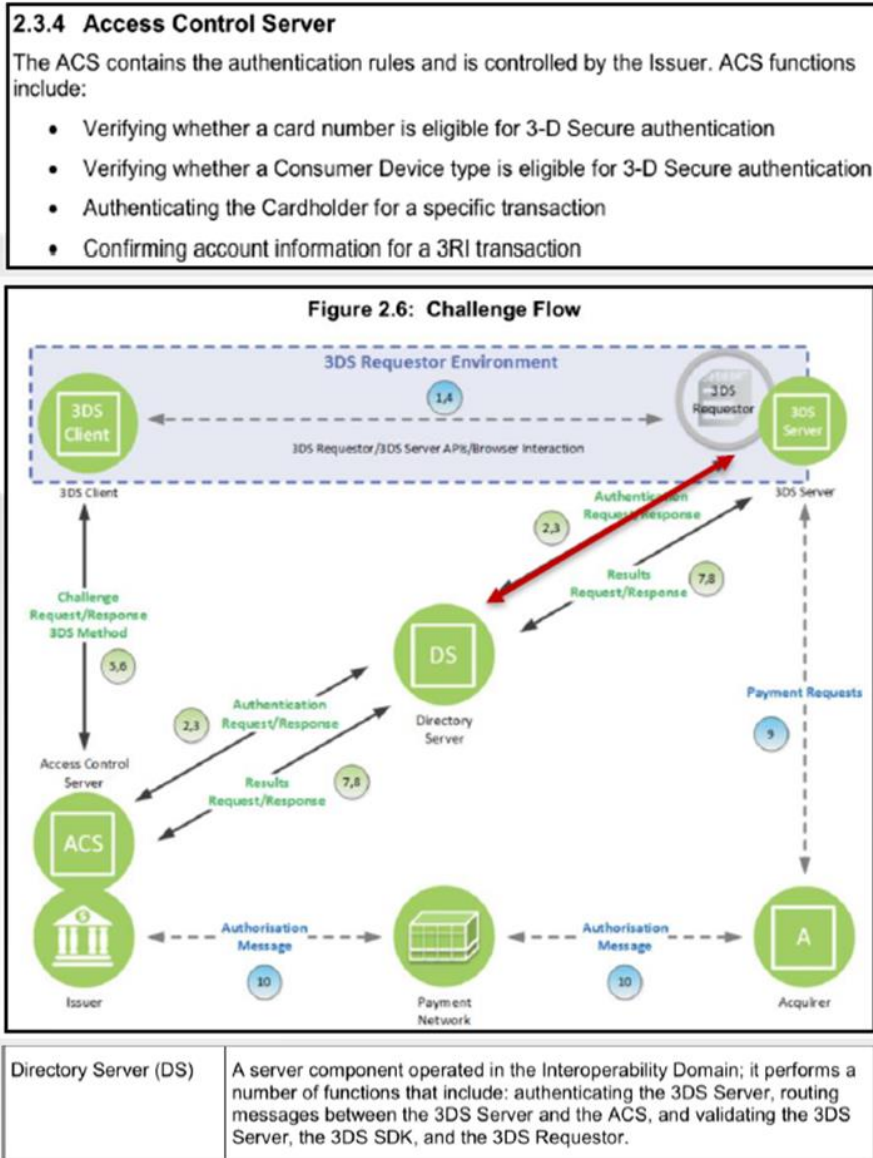
Business Credit Card by Citi; Expedia® Rewards Credit Card from Citi; Expedia® Rewards Voyager Credit Card from Citi; AT&T Access Credit Card From Citi; Citi Wayfair MasterCard; MY BEST BUY® VISA® PLATINUM; Brooks Brothers Platinum Mastercard; Home Depot Commercial Revolving Charge Card; Home Depot Commercial Account; Home Depot Consumer Credit Card; Shell Fuel Rewards Mastercard; and Citibank® Debit Card. *See, e.g., Payments compatible with your life*, CITI, <https://www.citi.com/credit-cards/creditcards/citi.action?ID=citi-google-pay> (“All Citi branded consumer credit and debit cards issued in the US are eligible for Google Pay, except for ATM cards, American Express cards, and Citi® / AAdvantage® cards. Citi branded business cards are not eligible for Google Pay, except for US issued Costco Anywhere Visa® Business cards.”) (last visited June 17, 2021).

32. The Accused Instrumentalities of the Citi Defendants infringe at least the claims of the '207 patent, which provide technological solutions and improvements for transaction security and user authentication. In conventional systems where, for example, a purchase is made online or over the telephone, the customer would enter or provide the card information without the merchant ever seeing the customer or the card. These so-called “card not present” transactions are characterized by a higher incidence of fraud than transactions where the cardholder presents the card directly to the merchant, i.e., “card present” transactions. Fraud in card not present transactions is a direct cost to merchants, who become the party bearing financial responsibility. To address the need to reduce card transaction fraud, the '207 patent provides, in one exemplary embodiment, an authentication site that receives an authorization request from the merchant. An identity of the cardholder is authenticated using information from the cardholder, which is matched to a predetermined stored value and an authentication score. An authorization site of the system authorizes the authorization request and matches the request to the cardholder. An authorization

confirmation is generated to include the authorization score and a private payment number to authorize a card payment request from the cardholder. A payment gateway communicates the authorization confirmation to a merchant site. The '207 patent describes systems and methods that provide secure payments for merchants, card holders, and banks.

33. The Citi Defendants infringe the '207 patent, for example, by providing a system for processing a commercial transaction that implements the EMV 3-D Secure specification. As part of a commercial transaction, the Citi Defendants, as the card issuer, perform, and/or direct and control, the authorization procedure in response to the submission of a card payment request from

the merchant. As shown below, an Access Control Server receives an authorization request from a merchant in response to a card payment request.



2. **3DS Server through DS to ACS**—Using the information provided by the Cardholder and data gathered within the 3DS Requestor Environment, the 3DS Server creates and sends an AReq message to the DS, which then forwards the message to the appropriate ACS.

*EMV 3-D Secure: Protocol and Core Functions Specification, Version 2.1.0 ,October 2017*



34. The ACS Server, which is controlled by the Citi Defendants, authenticates the identity of the cardholder by matching the information received from the cardholder with corresponding predetermined stored values, as explained below.

5. **3DS Client to ACS**—The 3DS Client initiates a CReq message based on information received in the ARes message. The manner in which this is done depends on the model:
  - **App-based**—A CReq message is formed by the 3DS SDK and is posted to the ACS URL received from the ARes message.
  - **Browser-based**—A CReq message is formed by the 3DS Server and is posted through the Cardholder's browser by the 3DS Requestor to the ACS URL received from the ARes message.
6. **ACS to 3DS Client**—The ACS receives the CReq message and interfaces with the 3DS Client to facilitate Cardholder interaction. The manner in which this is done depends on the model:
  - **App-based**—The ACS utilises pairs of CReq and CRes messages to perform the challenge. In response to the CReq message, the CRes message requesting the Cardholder to enter the authentication data is formed by the ACS and sent to the 3DS SDK.
  - **Browser-based**—The ACS sends the authentication user interface to the Cardholder browser. The Cardholder enters the authentication data via the browser to be checked by the ACS. In response to the CReq message, the CRes message is formed by the ACS and sent to the 3DS Server to indicate the result of the authentication.

35. The ACS Server generates an authentication score that the ACS places in the Transaction Status Reason message of the RReq message, as shown below.

Length: 2 characters

JSON Data Type: String

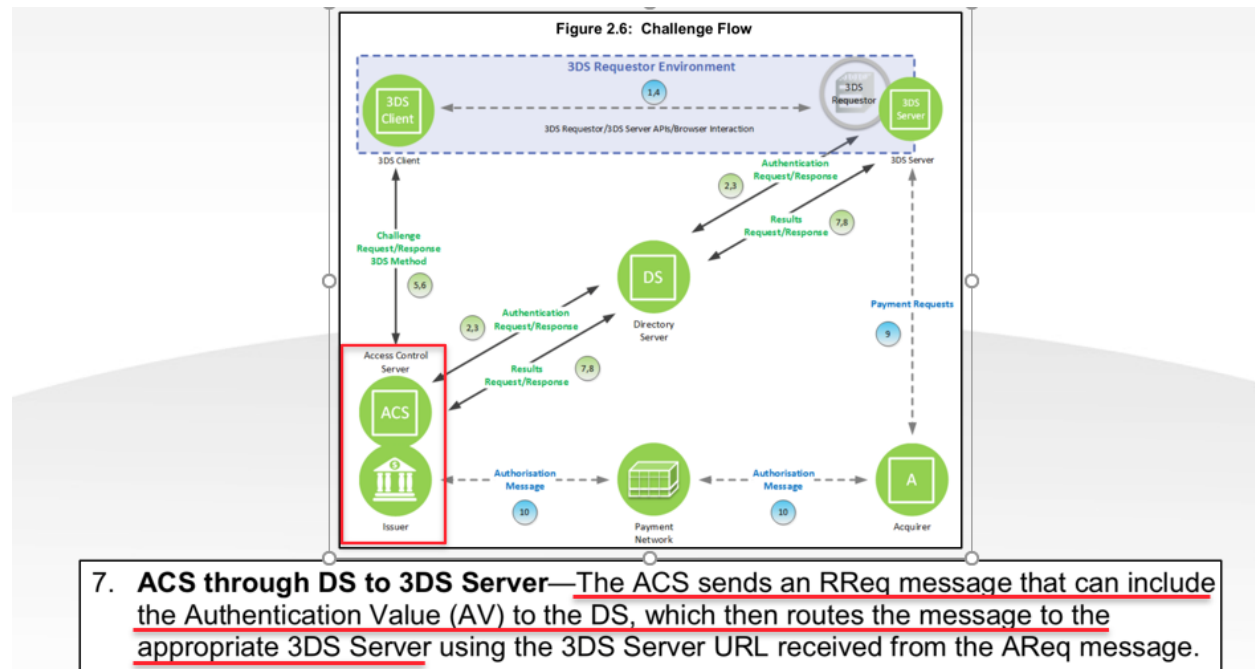
Values accepted:

- 01 = Card authentication failed
- 02 = Unknown Device
- 03 = Unsupported Device
- 04 = Exceeds authentication frequency limit
- 05 = Expired card
- 06 = Invalid card number
- 07 = Invalid transaction
- 08 = No Card record
- 09 = Security failure
- 10 = Stolen card
- 11 = Suspected fraud
- 12 = Transaction not permitted to cardholder
- 13 = Cardholder not enrolled in service
- 14 = Transaction timed out at the ACS
- 15 = Low confidence
- 16 = Medium confidence
- 17 = High confidence
- 18 = Very High confidence
- 19 = Exceeds ACS maximum challenges

<b>Transaction Status</b> Field Name: <code>transStatus</code>	Indicates whether a transaction qualifies as an authenticated transaction or account verification.  Note: The CRes message can contain only a value of Y or N.	ACS DS
<b>Transaction Status Reason</b> Field Name: <code>transStatusReason</code>	Provides information on why the Transaction Status field has the specified value.	ACS DS

36. The Citi Defendants require that online transactions be authorized by the issuer. As described below, the ACS includes an authorization site configured to authorize the authorization

request. The authorization response is accompanied by a transaction specific private payment number, e.g., an authentication identifier, or Authorization Code.



37. The Citi Defendants, as the issuer, sends, via their ACS Server an RReq message containing the authorization score to the merchant (i.e., the 3DS Server), as well as the



Authorization Code, as described below. Further, the payment gateway of the ACS Server communicates the RReq message to the merchant site to confirm the authorization.

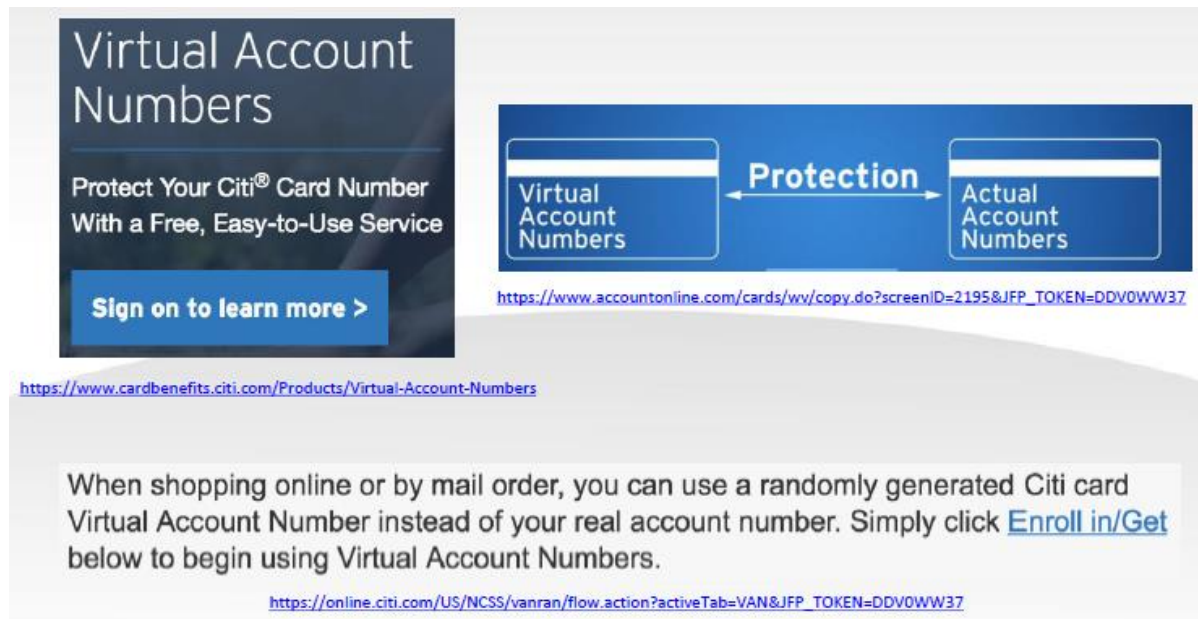
Data Element/Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion	Conditional Inclusion
Transaction Status Reason Field Name: transStatusReason	Provides information on why the Transaction Status field has the specified value.	ACS DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Card authentication failed</li> <li>02 = Unknown Device</li> <li>03 = Unsupported Device</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = C RReq = C	For 01-PA, required if the Transaction Status field = N, U, or R.  For 02-NPA, Conditional as defined by the DS.

**7. ACS through DS to 3DS Server**—The ACS sends an RReq message that can include the Authentication Value (AV) to the DS, which then routes the message to the appropriate 3DS Server using the 3DS Server URL received from the AReq message.

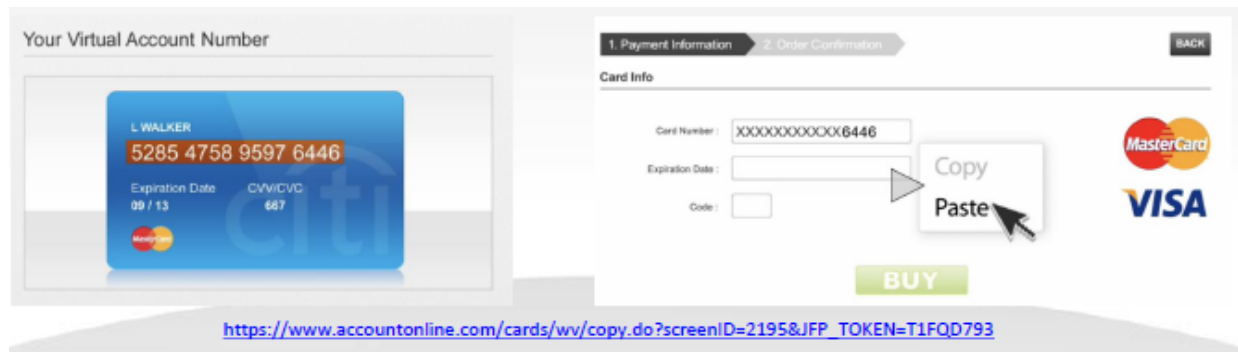
*EMV 3-D Secure: Protocol and Core Functions Specification, Version 2.1.0 ,October 2017*

38. The Accused Instrumentalities of the Citi Defendants infringe at least the claims of the '938 patent, which provide systems and methods that prevent card payment account numbers from being compromised, while also maximizing administrative efficiency. To do so, the '938 patent provides a mechanism to alter the card payment account number over the course of multiple transactions. Each new altered account number utilizes a different increment to make it difficult for a thief to predict what the new number will be, even if a prior account number was discovered. The account issuer also has the incremental values available in order to know what the current account number should be and associate the current account number with the particular cardholder. In one exemplary embodiment of the '938 patent, a computer-based system may replace a first portion of a first account code with data to create a second account code. A second portion of the second account code is associated with a second portion of the first account code. The second account may be used for a transaction. Such methods and systems of the '938 patent improve transaction security.

39. As shown below, the Citi Defendants infringe the '938 patent by creating virtual account number for Citi credit and debit card accounts.



40. The virtual account numbers, created and utilized by the Citi Defendants, must begin with Citibank's Issuer Identification Number, which informs merchants where to route transaction information. The Citi Defendants use these virtual account numbers for transactions, as shown in the above paragraph.



41. The Accused Instrumentalities of the Citi Defendants infringe at least the '301 patent, which provide technological solutions and improvements for issuing and using payment cards. The '301 patent addresses, for example, problems arising from overdraft charges and fees,

which may be charged to the customer without his or her knowledge. As one solution, the '301 patent provides a means of providing overdraft protection that includes a method associating a backup account, which could be a customer's savings account, with a primary account. Status information regarding the backup account may be maintained to facilitate authorization of transactions to cover any overdraft, thus avoiding the overdraft fee. In one exemplary embodiment of the '301 patent, a computer-based authorization system may receive a transaction request that is associated with a payment account. The payment account may be associated with a second separate account. The computer-based system may send a request for account information that includes account information of the separate account. The computer-based system may receive status information of the separate account, and the transaction request may be authorized based on the status information. The '301 patent allows for more flexibility and ease in payment transactions.

42. As shown below, the Citi Defendants infringe the '301 patent via an authorization system of the Citi Defendants that receives a transaction request associated with the checking

account, when a checking (i.e., debit) account is charged. The checking accounts may be associated with a separate Checking Plus variable rate line of credit for overdraft protection.

The screenshot displays the Citibank website interface for 'Full-Feature Relationship Checking'. At the top, a blue banner reads 'The Citibank Account Package' and 'Full-Feature Relationship Checking'. Below this, two columns of benefits are listed under the heading 'With The Citibank Account You Get'. The first column includes: 'Ability to earn Citi ThankYou® Rewards Points<sup>2</sup>', 'No Citi fee for using non-Citi ATMs when monthly balance requirements are met<sup>2</sup>', 'Option to earn interest on your checking account balance', and 'Potential to earn higher interest rates on savings and money market accounts'. The second column, titled 'To Waive the \$25 Monthly Service Fee', states: 'Maintain a combined average monthly balance of \$10,000+ in eligible linked deposit, retirement and investment accounts.' Below these columns, a white box with a black border is titled 'Overdraft Protection'. It contains the text: 'Avoid overdrawing your account with Safety Check, or apply for a Checking Plus® (variable rate) line of credit for backup protection.<sup>4</sup>'. Below this text is a blue link that says 'Learn about Overdraft Protection >'. At the bottom of the screenshot, a URL is visible: <https://online.citi.com/US/banking/checking/citi.action?ID=citibank-account>.

43. As explained below, prior to being used for overdraft protection, the Checking Plus line of credit must be checked by the authorization server of the Citi Defendants to ensure sufficient

funds exist in the account (i.e., receiving status information). If sufficient funds are available, the transaction is authorized (i.e., based on the status information).

<p><b>Checking Plus® (variable rate) line of credit</b></p> <p>The protection you need, the flexibility you want.</p> <p>A Checking Plus® line of credit account provides the overdraft protection you need to make bounced checks a thing of the past. If approved, you can also use this revolving line of credit whenever you need quick access to cash.</p>	<p><b>Right for you if:</b></p> <ul style="list-style-type: none"> <li>✓ You want the safety of overdraft protection</li> <li>✓ <u>You never want to bounce another check<sup>3</sup></u></li> <li>✓ You could use a revolving line of credit</li> </ul>
<p>3. A Checking Plus (variable rate) line of credit account will prevent a check from being returned unpaid <u>only to the extent your line of credit is unused and available for this purpose.</u></p>	

[https://online.citi.com/US/IRS/pands/detail.do?ID=CheckingPlus&JFP\\_TOKEN=AKD5NH2C](https://online.citi.com/US/IRS/pands/detail.do?ID=CheckingPlus&JFP_TOKEN=AKD5NH2C)

44. The Accused Instrumentalities of the Citi Defendants infringe at least the claims of the '802 patent, which provide technological solutions and improvements in a transaction card initiation process which can be completed securely over a network, as opposed to conventional systems which used voice response systems or in-person customer service. Voice response systems limited fraud identification capabilities, and in-person systems increased costs and were inconvenient to customers. To address these limitations, the '802 patent, in one exemplary embodiment, provides notice to a consumer to activate a payment card via a network site. Instructions are provided to the consumer regarding accessing the site. The consumer is prompted to provide information and data, including predetermined card information, personal information, and authentication and service data. The provided information is processed against previously stored data in order to activate the card. The consumer is notified of the processing results.

45. The Citi Defendants infringe the '802 patent by providing the Citi Defendants' online websites to Citi's consumers, as users of Citi's payment card products, in order to register and activate their credit cards via the internet, i.e., a computer network. As shown below, the Citi

Defendants provide notice to and instruct a user to register and activate, for example, a Citibank Costco card on the citi.com website.



46. To activate a credit card, a consumer enters, via a prompt, the card number and the CVV code (i.e., predetermined card information), as shown below. Personal information, such as date of birth and social security number, and authentication and service data, such as a user ID and password, are also required for activation. Authentication and service data includes information in addition to and different from information identifying the consumer, and personal information is different from predetermined card information.



47. The Citi Defendants process the inputted information against previously stored data to activate the card. The system notifies the consumer that its card has been activated and registered.

**Set Up Your New Costco Anywhere Visa® Card by Citi**  
(All fields are required unless specified as optional)

**Enter Card Information**

16 Digit Card Number

3 Digit Card Security Code

**Confirm Your Identity**

Your Date of Birth  
 Month  Day  Year

Your Social Security Number  
 Last 4 Digits  [I don't have a SSN](#)

**Complete Set Up of Your Costco Card**

Contact Info Online Access Security Settings Authorized Users Confirmation

Review charges, explore your benefits, pay your bill and more with online access.  
(All fields are required unless specified as optional)  
 Please note that existing User IDs for other accounts may not be available to link with your new Costco card. If your User ID isn't showing, we can't link your accounts and you'll need to create a new User ID.

Create a User ID  
 [Is this User ID available?](#)

Create a Password

Confirm Password

[https://www.citi.com/CRD/PDF/COSTCO\\_REGISTRATION.pdf](https://www.citi.com/CRD/PDF/COSTCO_REGISTRATION.pdf)

48. The Accused Instrumentalities include systems and methods for offering, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated accounts that are covered by the Asserted Patents. Along with the above technology discussion, each respective Count below describes how the Accused Instrumentalities infringe on specific claims of the Asserted Patents.

## **COUNT I**

(INFRINGEMENT OF U.S. PATENT NO. 7,431,207)

49. Plaintiff incorporates paragraphs 1 through 48 herein by reference.

50. Plaintiff is the assignee of the '207 patent, entitled "System and Method for Two-Step Payment Transaction Authorizations," with ownership of all substantial rights in the '207 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.



51. The '207 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '207 patent issued from U.S. Patent Application No. 11/031,111.

52. The Citi Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '207 patent in this District and elsewhere in Texas and the United States.

53. On information and belief, the Citi Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '207 patent, which include Citi Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts and related products and services for Citi's customers, consumers, and clients.

54. Defendant Citigroup directly infringes the '207 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '207 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

55. Furthermore, Defendant Citigroup directly infringes the '207 patent through its direct involvement in the activities of its subsidiaries, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc., including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Citigroup. On information and belief, the Citi Defendants' subsidiaries and affiliates conduct activities that constitutes direct infringement of the '207 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused



Instrumentalities. Citigroup is vicariously liable for this infringing conduct of its subsidiaries and affiliates, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. (under both the alter ego and agency theories) because, as an example and on information and belief, Defendant Citigroup, Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. are essentially the same company. Citigroup and Citibank NA have the right and ability to control other subsidiaries' infringing acts (including those activities of Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc.) and receives a direct financial benefit from their infringement.

56. For example, the Citi Defendants infringe claim 15 of the '207 patent via its Accused Instrumentalities that utilize a system for processing a commercial transaction that implements the EMV 3-D Secure specification for online payments. The Citi Defendants provide, for example, to consumers payment cards, such as credit and debit cards, that can be used for online payments that conform to the EMV standards. The Citi Defendants provide additional security and fraud detection services to its credit and debit card customers via the infringing EMV 3-D Secure technology.

57. The Accused Instrumentalities implement the "system for processing a commercial transaction" of claim 15. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused Instrumentalities include an authentication site configured to receive an authorization request from a merchant in response to a card payment request and authenticate an identity of a cardholder by matching information received from said cardholder with a corresponding predetermined stored value and generating an authentication score representing a

relative reliability of the identity of the cardholder based on the information from said cardholder; an authorization site coupled to said authentication site, said authorization site configured to authorize the authorization request and to match the authorization request to said cardholder and, if the authorization request is approved, request a private payment number from a private payment site and generate an authorization confirmation including said authentication score and said private payment number and authorize a card payment request from said cardholder upon authorizing said authorization request; and a payment gateway site coupled to said authorization site, said payment gateway site being configured to communicate said authorization confirmation to a merchant site.

58. At a minimum, the Citi Defendants have known of the '207 patent at least as early as the filing date of this complaint. In addition, the Citi Defendants have known about the '207 patent since at least April 1, 2019 when, via a letter, Plaintiff initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On May 6, 2019 via an email to Defendant Citigroup, Plaintiff provided the Citi Defendants with access to a data room containing claim charts for patents in the portfolio. After Plaintiff sought to schedule a call with the Citi Defendants via a series of emails, Plaintiff again sent a letter on April 1, 2020 to the Citi Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '207 patent.

59. On information and belief, since at least the above-mentioned date when the Citi Defendants were on notice of their infringement, the Citi Defendants have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '207 patent to directly infringe one or more claims

of the '207 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '207 patent.

60. On information and belief, the Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; adopting payment authorization and fraud detection services standards and specifications (e.g., the EMV 3-D secure standards) to allow for enhanced security for consumers and merchants in processing card payments; as payment card issuer, providing and receiving additional data elements related to detecting and preventing online fraud; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; partnering with retailers and private labels to “co-brand” cards that incentivize use of Citi’s payment cards in commerce; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Citi’s mobile and contactless payment features in the Accused Instrumentalities; providing websites (e.g., citi.com and citigroup.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused

Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers.

61. On information and belief, despite having knowledge of the '207 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '207 patent, the Citi Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Citi Defendants' infringing activities relative to the '207 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

62. Plaintiff LPV has been damaged as a result of the Citi Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

## **COUNT II**

(INFRINGEMENT OF U.S. PATENT NO. 8,584,938)

63. Plaintiff incorporates paragraphs 1 through 62 herein by reference.

64. Plaintiff is the assignee of the '938 patent, entitled "Wireless Transaction Medium Having Combined Magnetic Stripe and Radio Frequency Communications," with ownership of all substantial rights in the '938 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

65. The '938 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '938 patent issued from U.S. Patent Application No. US 13/713,976.

66. The Citi Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '938 patent in this District and elsewhere in Texas and the United States.

67. On information and belief, the Citi Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '938 patent, which include Citi Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts and related products and services for Citi's customers, consumers, and clients.

68. Defendant Citigroup directly infringes the '938 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '938 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

69. Furthermore, Defendant Citigroup directly infringes the '938 patent through its direct involvement in the activities of its subsidiaries, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc., including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Citigroup. On information and belief, the Citi Defendants' subsidiaries and affiliates conduct activities that constitutes direct infringement of the '938 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused

Instrumentalities. Citigroup is vicariously liable for this infringing conduct of its subsidiaries and affiliates, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. (under both the alter ego and agency theories) because, as an example and on information and belief, Defendant Citigroup, Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. are essentially the same company. Citigroup and Citibank NA have the right and ability to control other subsidiaries' infringing acts (including those activities of Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc.) and receives a direct financial benefit from their infringement.

70. For example, the Citi Defendants infringe claim 14 of the '938 patent via its Accused Instrumentalities that utilize methods that implement virtual account number for online payments or mail order payments, i.e., in situations where the consumer must divulge its card account number, a virtual account number is used in place of a real account number. The Citi Defendants infringe the '938 patent via creation and use of virtual account numbers by the Citi Defendants, including vicariously and indirectly via Defendants' clients, customers, and users, in online shopping and mail order transactions, for example, conducted with Citi payment card accounts. The Citi Defendants, as the payment card issuer, direct and control, including via their alter egos, agents, affiliates, partners, and subsidiaries, creation and use of these virtual account numbers to further increase security and for its own benefit and the benefit of users of such accounts.

71. The Accused Instrumentalities implement the method of claim 14. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused Instrumentalities

practice the following method steps: replacing, by a computer-based system for creating a second account code, a first portion of a first account code with data to create the second account code, wherein a second portion of the second account code is associated with a second portion of the first account code; and wherein the second account code may be used for a transaction.

72. At a minimum, the Citi Defendants have known of the '938 patent at least as early as the filing date of this complaint. In addition, the Citi Defendants have known about the '938 patent since at least April 1, 2019 when, via a letter, Plaintiff initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On May 6, 2019 via an email to Defendant Citigroup, Plaintiff provided the Citi Defendants with access to a data room containing claim charts, including for the '938 patent. After Plaintiff sought to schedule a call with the Citi Defendants via a series of emails, Plaintiff again sent a letter on April 1, 2020 to the Citi Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '938 patent.

73. On information and belief, since at least the above-mentioned date when the Citi Defendants were on notice of their infringement, the Citi Defendant have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '938 patent to directly infringe one or more claims of the '938 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '938 patent.

74. On information and belief, the Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; as payment card issuer, providing EMV payment applications, related tokens, and virtual account numbers to third-party mobile wallet providers, point of sale terminal providers, merchants (including online and mail order), and users; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; partnering with retailers and private labels to “co-brand” cards that incentivize use of Citi’s payment cards in commerce; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Citi’s payment card features in the Accused Instrumentalities, including the use of virtual account numbers; providing websites (e.g., citi.com and citigroup.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including overdraft protection services, in the United States. *See, e.g., Virtual Account Numbers*, CITI, <https://www.cardbenefits.citi.com/Products/Virtual-Account-Numbers> (last visited June 25, 2021) (“Citi helps make my credit card number virtually impossible to steal by generating a random Citi card number that I can use while shopping online.”).



75. On information and belief, despite having knowledge of the '938 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '938 patent, the Citi Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Citi Defendants' infringing activities relative to the '938 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

76. Plaintiff LPV has been damaged as a result of the Citi Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

### **COUNT III**

#### **(INFRINGEMENT OF U.S. PATENT NO. 8,905,301)**

77. Plaintiff incorporates paragraphs 1 through 76 herein by reference.

78. Plaintiff is the assignee of the '301 patent, entitled "System, Method, and Computer Program Product for Issuing and Using Debit Cards," with ownership of all substantial rights in the '301 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

79. The '301 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '301 patent issued from U.S. Patent Application No. 12/907,955.

80. The Citi Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '301 patent in this District and elsewhere in Texas and the United States.

81. On information and belief, the Citi Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '301 patent, which include Citi Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts and related products and services for Citi's customers, consumers, and clients.

82. Defendant Citigroup directly infringes the '301 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '301 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

83. Furthermore, Defendant Citigroup directly infringes the '301 patent through its direct involvement in the activities of its subsidiaries, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc., including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Citigroup. On information and belief, the Citi Defendants' subsidiaries and affiliates conduct activities that constitutes direct infringement of the '301 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused Instrumentalities. Citigroup is vicariously liable for this infringing conduct of its subsidiaries and affiliates, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. (under both

the alter ego and agency theories) because, as an example and on information and belief, Defendant Citigroup, Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. are essentially the same company. Citigroup and Citibank NA have the right and ability to control other subsidiaries' infringing acts (including those activities of Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc.) and receives a direct financial benefit from their infringement.

84. For example, the Citi Defendants infringe claim 1 of the '301 patent via its Accused Instrumentalities that utilize methods that process financial transactions using Citi's payment card accounts. In particular, the Citi Defendants infringe the '301 patent via creation and use of separate accounts that are associated with a debit account, e.g., utilizing a Checking Plus variable rate line of credit with a Citi checking account for overdraft protection. *See Overdraft Protection*, CITI, <https://online.citi.com/US/JRS/pands/detail.do?ID=OverdraftProtection> (last visited June 21, 2021).

85. The Accused Instrumentalities implement the method of claim 1. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused Instrumentalities practice the following method steps: receiving, at a computer-based authorization system, a transaction request associated with a debit account, wherein the debit account is associated with a separate account; sending, using the computer-based authorization system, an account information request that includes account information of the separate account; receiving, at the computer-based authorization system, status information of the separate account in response to the account

information request; and authorizing, using the computer-based authorization system, the transaction request based on the status information.

86. At a minimum, the Citi Defendants have known of the '301 patent at least as early as the filing date of this complaint. In addition, the Citi Defendants have known about the '301 patent since at least April 1, 2019 when, via a letter, Plaintiff initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On May 6, 2019 via an email to Defendant Citigroup, Plaintiff provided the Citi Defendants with access to a data room containing claim charts, including for the '301 patent. After Plaintiff sought to schedule a call with the Citi Defendants via a series of emails, Plaintiff again sent a letter on April 1, 2020 to the Citi Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '301 patent.

87. On information and belief, since at least the above-mentioned date when the Citi Defendants were on notice of their infringement, the Citi Defendant have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '301 patent to directly infringe one or more claims of the '301 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '301 patent.

88. On information and belief, the Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, partners, customers, clients, subsidiaries,

and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; as payment card issuer, providing, as the payment card issuer, internal payment processing, authentication, authorization, and fraud detection systems and methods, including overdraft protections for consumers; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; partnering with retailers and private labels to “co-brand” cards that incentivize use of Citi’s payment cards in commerce; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Citi’s mobile and contactless payment features in the Accused Instrumentalities; providing websites (e.g., citi.com and citigroup.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including overdraft protection services, in the United States. *See, e.g.,* *Protection Services*, CITI, <https://online.citi.com/US/JRS/pands/detail.do?ID=ProtectionServices> (“Apply for the overdraft protection you need to make bounced checks a thing of the past.”) (last visited June 25, 2021).

89. On information and belief, despite having knowledge of the ’301 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’301 patent, the Citi Defendants have nevertheless continued their infringing conduct and disregarded an objectively

high likelihood of infringement. The Citi Defendants' infringing activities relative to the '301 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

90. Plaintiff LPV has been damaged as a result of the Citi Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

#### **COUNT IV**

##### **(INFRINGEMENT OF U.S. PATENT NO. 6,820,802)**

91. Plaintiff incorporates paragraphs 1 through 90 herein by reference.

92. Plaintiff is the assignee of the '802 patent, entitled "Online Card Activation System and Method," with ownership of all substantial rights in the '802 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

93. The '802 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '802 patent issued from U.S. Patent Application No. 09/924,025.

94. The Citi Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '802 patent in this District and elsewhere in Texas and the United States.

95. On information and belief, the Citi Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '802 patent,

which include Citi Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts and related products and services for Citi's customers, consumers, and clients.

96. Defendant Citigroup directly infringes the '802 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '802 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

97. Furthermore, Defendant Citigroup directly infringes the '802 patent through its direct involvement in the activities of its subsidiaries, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc., including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Citigroup. On information and belief, the Citi Defendants' subsidiaries and affiliates conduct activities that constitutes direct infringement of the '802 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused Instrumentalities. Citigroup is vicariously liable for this infringing conduct of its subsidiaries and affiliates, including Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. (under both the alter ego and agency theories) because, as an example and on information and belief, Defendant Citigroup, Defendant Citibank NA and other subsidiaries such as Citicorp Credit, Citifinancial Inc., also known as CFNA Receivables (TX) LLC, and Citimortgage Inc. are essentially the same company. Citigroup and Citibank NA have the right and ability to control other subsidiaries' infringing acts (including those activities of Citicorp Credit, Citifinancial Inc., also known as CFNA



Receivables (TX) LLC, and Citimortgage Inc.) and receives a direct financial benefit from their infringement.

98. For example, the Citi Defendants infringe claim 1 of the '802 patent via its Accused Instrumentalities that utilize methods that process Citi's payment card accounts through a computer network, including, but not limited to, registration and activation of accounts. In particular, the Citi Defendants infringe the '802 patent by providing notifications and instructions to account users for registering and activating the user's payment accounts via Citi's websites, e.g., citi.com. *See Activate and Register Your Card*, CITI, *available at* [https://www.citi.com/CRD/PDF/COSTCO\\_REGISTRATION.pdf](https://www.citi.com/CRD/PDF/COSTCO_REGISTRATION.pdf) (last accessed June 21, 2021).

99. The Accused Instrumentalities implement the "method for processing a card through a computer network" of claim 1. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused Instrumentalities practice the following method steps: a) providing a notice to a consumer to activate a card on a site on first computing system in communication with a second computing system over a first network; b) instructing the consumer to access the site; c) prompting the consumer to provide predetermined card information, personal information for use in identifying the consumer, and authentication and service data, when available, to the site and communicating the predetermined card information to the second computing system over the first network; d) processing, by the second computing system, the predetermined card information, the personal information, and authentication and service data, when available against previously stored account data in order to activate the card and generating processing results; and e) notifying the consumer on the first computing network of the processing results, wherein the authentication and service data includes information in addition to and different from information identifying the

consumer, and wherein the personal information is different from the predetermined card information.

100. At a minimum, the Citi Defendants have known of the '802 patent at least as early as the filing date of this complaint. In addition, the Citi Defendants have known about the '802 patent since at least April 1, 2019 when, via a letter, Plaintiff initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On May 6, 2019 via an email to Defendant Citigroup, Plaintiff provided the Citi Defendants with access to a data room containing claim charts, including for the '802 patent. After Plaintiff sought to schedule a call with the Citi Defendants via a series of emails, Plaintiff again sent a letter on April 1, 2020 to the Citi Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '802 patent.

101. On information and belief, since at least the above-mentioned date when the Citi Defendants were on notice of their infringement, the Citi Defendant have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '802 patent to directly infringe one or more claims of the '802 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '802 patent.

102. On information and belief, the Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, partners, customers, clients, subsidiaries,

and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; as payment card issuer, providing, as the payment card issuer, internal payment processing, authentication, authorization, and fraud detection systems and methods, including registration and activation protections applied to payment cards for consumers; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; partnering with retailers and private labels to “co-brand” cards that incentivize use of Citi’s payment cards in commerce; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Citi’s fraud protection features, including activation and registration services, in the Accused Instrumentalities; providing websites (e.g., citi.com and citigroup.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including overdraft protection services, in the United States. *See, e.g., Activate and register your card*, CITI, [https://www.citi.com/CRD/PDF/COSTCO\\_REGISTRATION.pdf](https://www.citi.com/CRD/PDF/COSTCO_REGISTRATION.pdf) (last visited June 25, 2021) (providing a pdf document to consumers giving step-by-step instructions for card registration and activation).

103. On information and belief, despite having knowledge of the ’802 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’802 patent, the

Citi Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Citi Defendants' infringing activities relative to the '802 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

104. Plaintiff LPV has been damaged as a result of the Citi Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

### **CONCLUSION**

105. Plaintiff is entitled to recover from Defendants the damages sustained by Plaintiff as a result of Defendants' wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

106. Plaintiff has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute may give rise to an exceptional case within the meaning of 35 U.S.C. § 285, and Plaintiff is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

### **JURY DEMAND**

107. Plaintiff hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

**PRAYER FOR RELIEF**

108. Plaintiff requests that the Court find in its favor and against Defendants, and that the Court grant Plaintiff the following relief:

1. A judgment that Defendants have infringed the Asserted Patents as alleged herein, directly and/or indirectly by way of inducing infringement of such patents;
2. A judgment for an accounting of damages sustained by Plaintiff as a result of the acts of infringement by Defendants;
3. A judgment and order requiring Defendants to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
4. A judgment and order requiring Defendants to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
5. A judgment and order finding this to be an exceptional case and requiring Defendants to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and
6. Such other and further relief as the Court deems just and equitable.

Dated: July 8, 2021

Respectfully submitted,

/s/ Terry A. Saad

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